ACC.15
TCT@ACC-i2 | innovation in intervention

A1234
JACC March 17, 2015
Volume 65, Issue 10S

Non Invasive Imaging (Echocardiography, Nuclear, PET, MR and CT)

IMPACT OF MICROVASCULAR COMPLICATIONS ON LEFT VENTRICULAR LONGITUDINAL FUNCTION IN PATIENTS WITH DIABETES MELLITUS AND PRESERVED LEFT VENTRICULAR EJECTION FRACTION

Poster Contributions
Poster Hall B1
Sunday, March 15, 2015, 9:45 a.m.-10:30 a.m.

Session Title: Non Invasive Imaging: Strain Imaging by Echocardiography
Abstract Category: 17. Non Invasive Imaging: Echo
Presentation Number: 1174-048

Authors: *Yasuhide Mochizuki, Hidekazu Tanaka, Kumiko Doukuni, Yutaka Hatani, Keiko Hatazawa, Hiroki Matsuzoe, Hiromi Toki, Hiroyuki Shimoura, Junichi Ooka, Hiroyuki Sano, Takuma Sawa, Yoshiki Motoji, Keiko Ryo, Kensuke Matsumoto, Ken-ichi Hirata, Kobe University Graduate School of Medicine, Kobe, Japan*

Background: Left ventricular (LV) longitudinal function was related to subclinical LV dysfunction and development of heart failure in patients with diabetes mellitus (DM) and preserved LV ejection fraction (EF). However, the association of LV longitudinal dysfunction with major three diabetes-related microvascular complications including nephropathy, retinopathy and neuropathy remains uncertain.

Methods: We studied 117 DM patients without coronary artery disease. Their mean age was 59±14 years, 64 (54 %) were female, mean LVEF was 66±4% (all≥50%) and mean HbA1c was 8.7±2.3%. Global longitudinal strain (GLS) was determined as averaged peak strain of 18-segment from standard apical views using two-dimensional speckle-tracking and was expressed as an absolute value. As previously described, the pre-defined cutoff for subclinical LV dysfunction in DM patients with preserved LVEF was set at GLS<18%.

Results: GLS<18% was observed in 49 patients (42%). In multivariate logistic regression, body mass index (BMI), nephropathy and neuropathy were independently associated with reduced GLS. For sequential logistic models, a model based on baseline characteristics including age, gender and DM duration was improved by addition of BMI (p=0.002) and further improved by addition of the presence of nephropathy and neuropathy (p=0.0002).

Conclusion: The evaluation of major microvascular complications may lead to detect earlier stage of LV myocardial dysfunction in DM patients with preserved LVEF.